SKILLS for the FUTURE
WISCONSIN
YOUTH APPRENTICESHIP

Drafting/Design
Mechanical Design
Skill Standards Checklist

CERTIFICATION AREAS COMPLETED:

____ Core Abilities

____ Computer Aided Drafting
____ Part 1
____ Part 2

____ Engineering Graphics

____ Manufacturing Methods and Processes

____ A minimum of 900 work hours

Student Name_____

School District_____

YA Consortium_____

YA Coordinator_____

High School Diploma/GED/HSED

Date Received_____

Level One Requirements: Complete Core Abilities and Computer Aided Drafting ***OR*** Core Abilities, Engineering Graphics and Manufacturing Methods. A minimum of 450 work hours.

Total Hours Employed	**Company Name**	**Phone #**

Instruction for the Worksite Mentor

The Skill Standards Checklist is a list of competencies (tasks) to be achieved through mentoring at the worksite.

- Each competency has three levels.
- The worksite mentor should rate each competency as the student acquires and demonstrates the skill.
- A competency may be revisited and the score raised as the student becomes more proficient at the worksite.
- The mentor and the student should go over the checklist together on a regular basis (at a minimum every 9 weeks) to record progress and plan future steps to complete the required competencies.

Please sign this page if you have been a mentor, trainer or instructor of this student.

CERTIFICATION: I certify that this student has successfully completed the competencies required in my department.

_____	**Mentor/Trainer Signature**	_____	Printed Name
_____	Department	_____	Date Signed
_____	**Mentor/Trainer Signature**	_____	Printed Name
_____	Department	_____	Date Signed
_____	**Mentor/Trainer Signature**	_____	Printed Name
_____	Department	_____	Date Signed
_____	**Mentor/Trainer Signature**	_____	Printed Name
_____	Department	_____	Date Signed
_____	**Mentor/Trainer Signature**	_____	Printed Name
_____	Department	_____	Date Signed
_____	**Instructor Signature**	_____	Printed Name
_____	Department	_____	Date Signed
_____	**Instructor Signature**	_____	Printed Name
_____	Department	_____	Date Signed

Core Abilities Required

Core abilities address broad knowledge, skills, and attitudes that go beyond the context of a specific course. These standards are not taught in specific lessons. These are the employability skills that are critical for success in the drafting/design industry.

RATING:

3 = Consistently displays this behavior

2 = Often displays this behavior

1 = Rarely displays this behavior

		Score		
1.	Communicates clearly with supervisor and others	3	2	1
2.	Acts professionally	3	2	1
3.	Learns effectively	3	2	1
4.	Manages self responsibly	3	2	1
5.	Plans for changes (flexibility and adaptability)	3	2	1
6.	Plans for personal and professional growth	3	2	1
7.	Works productively	3	2	1
*8.	Recognizes safe and unsafe procedures	*3	2	1
*9.	Demonstrates proper safety procedures	*3	2	1
*10.	Maintains a safe and healthy work environment	*3	2	1

All competencies in this section must be rated 2 or higher
All * items must be completed at a 3 rating

Comments: _____

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Computer Aided Drafting – Part 1

RATING:

3 = Able to perform entry-level skills. Has performed job during training program; limited additional training/supervision may be required.

2 = Has performed job during training program; additional training is required to develop entry-level skills.

1 = Is familiar with process, but is unable to perform job with entry-level skills.

			Score	
*1.	Examine the role of drawings in industry	*3	2	1
2.	Explore mechanical design/engineering/architectural careers	3	2	1
3.	Apply geometric construction in the solution of drawing problems	3	2	1
*4.	Use the basic functions of CAD software and file management	*3	2	1
5.	Use CAD coordinate systems	3	2	1
*6.	Use drawing aids and enhancements	*3	2	1
*7.	Layout one-view drawings	*3	2	1
*8.	Create geometric entities on a drawing	*3	2	1
*9.	Use CAD editing commands	*3	2	1
*10.	Use electronic printers, plotters, lettering devices to produce prints	*3	2	1
*11.	Apply the principles of orthographic projection in the creation of a drawing	*3	2	1
12.	Interpret auxiliary drawing information	3	2	1
*13.	Dimension a drawing	*3	2	1
14.	Sketch pictorial drawings	3	2	1
15.	Create an isometric drawing	3	2	1

All competencies must be rated
Competencies 1 through 13 must be rated at a level 2 or higher
All * competencies must be rated at a level 3

Comments: _____

Computer Aided Drafting – Part 2

RATING:

3 = Able to perform entry-level skills. Has performed job during training program; limited additional training/supervision may be required.

2 = Has performed job during training program; additional training is required to develop entry-level skills.

1 = Is familiar with process, but is unable to perform job with entry-level skills.

			Score	
*1.	Draw a section view	*3	2	1
*2.	Construct a primary auxiliary (detail) view	*3	2	1
3.	Create assembly drawings	3	2	1
4.	Interpret product specifications	3	2	1
5.	Analyze part prints	3	2	1
6.	Interpret (geometric) dimensioning and tolerancing symbols	3	2	1
7.	Participate in the design process	3	2	1

All competencies must be rated
All * competencies must be rated at a level 3

Comments: _____

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Engineering Graphics

RATING:

3 = Able to perform entry-level skills. Has performed job during training program; limited additional training/supervision may be required.

2 = Has performed job during training program; additional training is required to develop entry-level skills.

1 = Is familiar with process, but is unable to perform job with entry-level skills.

		Score		
1.	Identify possible design specifications	3	2	1
2.	Finalize design criteria and parameters	3	2	1
3.	Select project media and development process	3	2	1
4.	Coordinate project steps with other project/departments	3	2	1
5.	Create multi-view working drawings	3	2	1
6.	Create section view working drawings	3	2	1
7.	Create isometric working drawings	3	2	1
8.	Create perspective view working drawings	3	2	1
9.	Create detail drawings	3	2	1
10.	Apply rendering techniques to drawings	3	2	1
11.	Create specialty drawings used within the industry, contour maps, flow charts, schematics	3	2	1
12.	Apply dimensioning techniques to drawings	3	2	1
13.	Check, revise and record drawings	3	2	1

_____ Total # of Competencies rated 2 or higher (11 Required)

Comments: _____

Manufacturing Processes

RATING:

3 = Able to perform entry-level skills. Has performed job during training program; limited additional training/supervision may be required.

2 = Has performed job during training program; additional training is required to develop entry-level skills.

1 = Is familiar with process, but is unable to perform job with entry-level skills.

		Score		
1.	Identify the manufacturing processes used within industry of employment	3	2	1
2.	Read measuring devices	3	2	1
3.	Create pattern drawings for cast parts	3	2	1
4.	Understands the casting process in a foundry setting	3	2	1
5.	Performs quality inspection of cast parts	3	2	1
6.	Identify plastic processing	3	2	1
7.	Identify types of welds	3	2	1
8.	Apply weld symbols to drawings	3	2	1
9.	Identify machining equipment and processes	3	2	1
10.	Create CNC language	3	2	1
11.	Create assembly drawings	3	2	1
12.	Identify product assembly process	3	2	1
13.	Identify mechanical fasteners	3	2	1
14.	Identify surface coatings	3	2	1
15.	Read material safety data sheets (MSDS)	3	2	1
16.	Understands basic statistical process control	3	2	1
17.	Define ISO 9000	3	2	1
18.	Complete engineering calculations	3	2	1
19.	Develop a project portfolio	3	2	1
20.	Make a formal presentation	3	2	1
21.	Build models/prototypes	3	2	1
22.	Understands and applies quality concepts/standards	3	2	1
23.	Test the feasibility of product/design	3	2	1

Manufacturing Processes (continued)

24.	Document through a technical report project recommendations	3	2	1
25.	Demonstrate teamwork skills	3	2	1

_____ Total # of Competencies rated 2 or higher (22 Required)

Comments: _____

Special Projects or Certifications

Instructor/Mentor Comments:

Instructor/Mentor Signature

Date Signed

Notes